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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,290	07/30/2003	Michael Bowling	10326-0001 33,212	9726

3490 7590 09/21/2004

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EXAMINER
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PRINCE, FRED G

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/630,290

Applicant(s)

BOWLING ET AL.

Examiner

Fred Prince

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-24 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 8-12 is/are rejected.
- 7) ☐ Claim(s) 3-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Oath/Declaration***

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It was not executed in accordance with either 37 CFR 1.66 or 1.68.

### ***Drawings***

The informal drawings are of sufficient quality to permit examination. However, new drawings will be required if the application is allowed as the current drawings do not meet USPTO standards for formal drawings.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: It appears that "pholoxidases" should be rewritten as --phenoloxidases-- . Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-2 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishida et al.

Nishida et al. disclose providing a pulp wastewater source containing lignin (abstract), adding a simple sugar to the wastewater (col. 4, lines 30-31), and adding white rot fungus (col. 2, lines 38-52) to the wastewater in order to break down lignin in the wastewater via enzymes produced by the fungus, wherein a goal of the treatment method is to accelerate the decomposition of lignin (col. 2, lines 6-12). Nishida et al. do not explicitly disclose that phenoxidase production is accelerated or the specified population density.

In any case, it is submitted it would have been obvious for the skilled artisan to have added the sugar to the water in such a way that the production of enzymes is accelerated since such production would shorten decomposition time, a goal of Nishida et al.

Regarding the specified population density, it is submitted that it is well within the purview of the skilled artisan to provide a given population density depending of expected load, degree of contamination, and the results desired. Accordingly, it would have been obvious for the skilled artisan to provided the wastewater treatment step with the specified population density in order to efficiently decompose lignin depending on the expected load, degree of contamination, and the results desired.

Regarding adding sugar batchwise or in several steps over time, it is submitted that it is conventional in the art to add a carbon source in one step or in several steps depending on the results desired and the process design.

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Accordingly, it would have been obvious for the skilled artisan to have added the sugar batchwise or in several steps over time depending on the results desired and the process design.

***Allowable Subject Matter***

5. Claims 13-24 are allowed.
6. Claims 3-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter:

While it is known in the art to use white rot or brown rot fungi to treat waste water (see US Pat No 6,046,045), in the examiner's opinion, the prior art fails to teach or fairly suggest the brown rot fungi converting cellulose or hemi-cellulose to glucose to be subsequently used by white rot fungi to accelerate the production of phenoloxidase.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References are cited of interest to show the state of art.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Prince whose telephone number is (571)

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272-1165. The examiner can normally be reached on Monday-Thursday, 6:30-4:00; alt. Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Fred Prince  
Primary Examiner  
Art Unit 1724

fgp  
9/16/04